Before the FEDERAL COMMUNICATIONS COMMISSION Washington, DC 20554

In the Matter of)	
TW Telecom Inc. Petition for Declaratory)	WC Docket No. 11-119
Ruling Regarding Direct IP-to-)	
Interconnection Pursuant to Section)	
251(C)(2) of the Communications Act)	
)	

REPLY COMMENTS OF METROPCS COMMUNICATIONS, INC.

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MetroPCS Communications, Inc. ("MetroPCS"), by its attorneys, hereby respectfully submits its reply comments on the *Public Notice* ("*Public Notice*") released by the Federal Communications Commission (the "FCC" or "Commission") in the above-captioned proceeding seeking comment on the Petition for Declaratory Ruling ("Petition") filed by TW Telecom Inc. ("TWTC"). In summary, MetroPCS supports a clarification that all carriers should be obligated to provide Internet Protocol ("IP") and IP interconnections where technically feasible. In support, the following is respectfully shown:

I. INTRODUCTION AND SUMMARY

The communications landscape is constantly evolving, and the Commission must be vigilant in order to ensure that regulatory classifications and obligations keep pace with changing

¹ For purposes of these Comments, the term "MetroPCS" refers to MetroPCS Communications, Inc. and all of its FCC-licensed subsidiaries.

² TW Telecom Inc. Petition for Declaratory Ruling Regarding Direct IP-to- IP Interconnection Pursuant to Section 251(C)(2) of the Communications Act, Public Notice, DA 11-1198, WC Docket No. 11-119 (rel. Jul. 22, 2011) ("Public Notice").

³ Petition for Declaratory Ruling of TW Telecom Inc., WC Docket No. 11-119 (filed Jul. 14, 2011) ("Petition").

technology and that outdated regulatory classifications do not impede technological advancement and innovation. Most recently, telecommunications carriers have increased the use of IP networks to route traffic, enabling them to capture the efficiency benefits, redundancy and resiliency associated with such networks and to offer new and innovative services that were not possible with legacy networks. The nature of these networks represents a major step forward in communications, making calls less susceptible to disruption or congestion to the benefit of both individual consumers and public safety alike, and allowing carriers to better meet consumers' needs. Unfortunately, many incumbent local exchange carriers ("ILECs") are using this important transition not as an opportunity to enhance the nation's communications network, but rather as a chance to use regulatory classifications to gain their own competitive advantage. In order to protect against this practice, as telecommunications networks become increasingly IP-based the Commission must affirm that interconnection obligations among carriers remain the same. The Commission should clarify that IP-to-IP interconnection is governed by Section 251(c) of the Communications Act of 1934, as amended (the "Act").

The Commission already has the legal framework in place to make such a determination with respect to traffic that originates as switched voice traffic. As an initial matter, switched voice traffic originating or terminating on the public switched telephone network is telecommunications and telecommunications services. The fact that such traffic can be exchanged in a different protocol – IP – rather than time division multiplexes ("TDM") does not alter that conclusion. In the *IP-in-the-Middle Order*, ⁴ the Commission confirmed that telecommunications services that go through an "IP-in-the-middle" path remain a telecommunications services. While that *Order* dealt only with a single carrier, the legal analysis

⁴ See infra.

does not change if two different carriers are exchanging switched voice traffic – the circumstances surrounding the use of IP-in-the-middle, and the nature and classification of the traffic routed, remain unchanged. Accordingly, the Commission need not (and, indeed, should not) even reach the issue of the regulatory classification of Voice over Internet protocol ("VoIP") services in the context of this proceeding. Rather, the Commission can make the requested clarification under the existing regulatory framework, at least for traffic that originates and terminates as telecommunications services in such as voice traffic terminated to the public switched telephone network ("PSTN"). A determination on how to classify VoIP is better made in the context of a rulemaking proceeding where a robust record is built through full industry participation.

As Section 251(c)(2) of the Communications Act of 1934, as amended (the "Act"), makes clear, carriers are obligated to provide reasonable interconnection to the extent technically feasible. In order to gauge the state of the industry with respect to IP interconnection, the Commission should promptly initiate an inquiry aimed at determining whether a critical mass of carriers are able to provide interconnection on an IP-to-IP basis. If, as MetroPCS suspects, such an inquiry indicates that many (if not most) carriers are using IP in their networks or are able to accomplish IP-to-IP interconnection using their existing facilities, the Commission should clarify that technically-capable carriers are required to provide such interconnection, at least for traffic that originates or terminates as circuit switched traffic.

Only by staying ahead of the technological curve will the Commission be able to maintain a regulatory regime that allows consumers and carriers alike to reap the benefits of the transition to an all-IP communications world.

II. IP-TO-IP INTERCONNECTION INCREASES NETWORK EFFICIENCY, BENEFITS PUBLIC SAFETY AND WILL INCREASE INVESTMENT IN BROADBAND INFRASTRUCTURE

MetroPCS strongly supports the evolution of the PSTN from a legacy circuit-switched network to a modern, efficient all-IP network. The Commission has recognized that broadband "is a growing platform over which the consumer accesses a multitude of services, including voice, data, and video in an integrated way across applications and providers." Indeed, the Commission specifically sought comment on the "appropriate policy framework to facilitate and respond to the market-led transition in technology and services, from the circuit switched PSTN to an IP-based communications world." The Commission-recognized fact that the communications landscape is shifting from a circuit-switched world to an all-IP world underlies the foundation of the TWTC Petition. TWTC, like MetroPCS and many other carriers, "is quickly replacing legacy TDM technology with IP technology . . . [and] must therefore negotiate the next generation of interconnection agreements on terms and conditions that are suitable for IP network architectures."

The replacement of this legacy TDM technology with the more efficient IP technology is no mere luxury. Rather, the Commission has properly recognized that "the transition from analog circuit-switched networks to IP networks" is "something necessary for our global competitiveness." IP-to-IP interconnection is considerably more efficient than circuit-switched

⁵ Comment Sought on Transition from Circuit-Switched Network to All-IP Network, Public Notice, 24 FCC Rcd 14272 at 1 (2009) ("IP Transition Notice").

⁶ *IP Transition Notice* at 1-2.

⁷ Petition at 5. Indeed, CMRS traffic will soon be primarily VoIP as Voice Over LTE becomes a reality late this year or early next year.

⁸ Connect America Fund, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, 26 FCC Rcd 4554, ¶ 6 (2011).

interconnection, as it does not require traffic to be separated into trunks. This dynamic routing capability will allow for more efficient and stable routing in the event of emergencies or substantial network congestion. Today, in a circuit-switched environment, interconnected traffic has defined routes that it must take in order to reach its intended end-point destination. Any disruption to points along this route will result in significant degradation, or perhaps elimination, of the ability to communicate along the specified path. This is most apparent when cables carrying telecommunications traffic are cut. IP networks, on the other hand, are self-healing and built with redundancy as a top priority. As the Commission recently recognized, "the failure of any one inter-ISP link will cause IP packets to be re-routed dynamically," such that any given "link failure would not necessarily result in the loss of IP-based communications connectivity." 10 Moving the PSTN to a redundant, self-healing all-IP network will have important public safety benefits, as isolated outages during emergencies may no longer have substantial impacts on the ability of the public and first responders to communicate. This also will have the benefit of being able to overcome congestion and other problems that may result at specific interconnection points – such as a cable cut. The Commission should encourage such a transition by affirmatively holding that all carriers must provide IP-to-IP interconnection pursuant to their obligations under Section 251(c)(2), as long as it is technically feasible to do so.

Requiring that ILECs provide IP-to-IP interconnection where technically feasible not only increases network efficiency, but also removes needless waste from the interconnection

⁹ If an IP route is blocked or unavailable, the network devises an alternative route on a dynamic basis to deal with that problem at that time. In a TDM network, all alternative paths must be programmed and designed – there is non-pre-planned dynamic routing.

¹⁰ The Proposed Extension of Part 4 of the Commission's Rules Regarding Outage Reporting To Interconnected Voice Over Internet Protocol Service Providers and Broadband Internet Service Providers, Notice of Proposed Rulemaking, PS Docket No. 11-82, ¶ 53 (rel. May 13, 2011).

process. As MetroPCS recently stated, requiring that IP traffic be converted to switched voice or TDM traffic merely to satisfy outdated regulatory artifices is "the very height of waste and inefficiency." Other industry stakeholders similarly recognize the absurdity of this exercise, noting that such a requirement "increases inefficiencies and costs and reduces voice quality through unnecessary protocol conversion." This is because "converting IP voice traffic to TDM format solely for the purpose of handing the traffic off at an interconnection point is not seamless when both of the interconnecting carriers' transport networks are packet-switched based." There simply is no reason why two carriers – both using IP transport networks – should not be interconnecting on an IP-to-IP basis, at least for switched voice traffic that is telecommunications traffic, where technically feasible.

In addition to the important network efficiency and public safety benefits that IP-to-IP interconnection will provide, requiring carriers to provide interconnection in such a manner also will have positive impacts on network investment. Although AT&T and Verizon have argued that they will be required to divert funds in order accomplish IP interconnection, this simply is a fallacy. ILECs unquestionably will be compensated for IP interconnection – just as they currently are compensated for circuit-switched interconnection. Perhaps most importantly, their costs will be lower for IP interconnection than for circuit-switched interconnection, meaning that interconnecting carriers are incented to use IP, rather than circuit-switched, interconnection.

¹¹ Comments of MetroPCS Communications, Inc., WC Docket No. 10-90, GN Docket No. 09-51, WC Docket No. 07-135, WC Docket No. 05-337, CC Docket No. 01-92, CC Docket No. 96-45, and WC Docket No. 03-109 (filed Aug. 24, 2011).

¹² Comments of COMPTEL, WC Docket No. 11-119, at 3 (filed Aug. 15, 2011).

¹³ *Id*.

¹⁴ Comments of AT&T Inc., WC Docket No. 11-119, at 11 (filed Aug. 15, 2011) ("AT&T Comments"); Comments of Verizon and Verizon Wireless, WC Docket No. 11-119, at 5 – 6 (filed Aug. 15, 2011) ("Verizon Comments").

Further, as a result of this increased use of its IP infrastructure, ILECs will be incented to invest in IP networks, which can also be used to provide broadband, because they will be receiving a greater return on their assets, which will in turn facilitate additional investment in IP networks.

III. ALL CARRIERS MUST BE REQUIRED TO PROVIDE IP-TO-IP INTERCONNECTION UNDER SECTION 251(C)(2) OF THE ACT, WHERE TECHNICALLY FEASIBLE

This transition to an efficient, all-IP network should be embraced by carriers, the Commission and consumers alike as heralding a new era of communications technology. Instead, many ILECs, "such as AT&T and Verizon have seized upon the industry's transition to IP technology as a pretext for denying carriers the right to IP-to-IP interconnection under Section 251(c)(2)." However, Section 251(c)(2) by its plain language requires that all common carriers:

[P]rovide, for the facilities and equipment of any requesting telecommunications carrier, interconnection with the local exchange carrier's network . . . at <u>any technically feasible point</u> within the carrier's network. 16

Section 251(c)(2) is technology-neutral by its very language, and indeed must be. As TWTC correctly recognizes, "[s]ince its inception, telephone service has undergone numerous technological changes from manual switching to analog electronic switching to digital circuit switching and now to IP." Throughout all of these changes, Section 251(c)(2) has still fundamentally required that carriers interconnect with one another when technically feasible. MetroPCS seeks nothing more than the continuation of this important obligation in an IP world for telecommunications traffic.

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¹⁵ Petition at 5.

¹⁶ 47 U.S.C. § 251(c)(2) (emphasis supplied).

¹⁷ Petition at 8.

Making such a determination for telecommunications traffic from MetroPCS' perspective is an even simpler proposition than the determination that TWTC seeks. TWTC seeks interconnection for traffic that "undergoes a net protocol conversation during transmission." ¹⁸ For many carriers, including MetroPCS, IP-to-IP interconnection involves no such net protocol conversion. The traffic that MetroPCS sends to LECs already is circuit-switched telecommunications traffic, so there is no net protocol conversion from the calling party to the called party. Rather, IP-to-IP interconnection merely represents the most efficient way to route telecommunications traffic. Indeed, the Commission already has found that telecommunications services where "IP-in-the-middle" is used remain telecommunications services when used between interconnected points. 19 While the *IP-in-the-Middle Order* dealt with a single carrier, the analysis is no different when separate carriers make up the two ends of the interconnected call. Regardless of whether one or two carriers are involved in using IP to route customers' calls, "[e]nd-user customers do not order a different service, pay different rates, or place and receive calls any differently than they do through [each carrier's] traditional circuit-switched long distance service; the decision to use its Internet backbone to route certain calls is made internally by [each carrier]."²⁰ Importantly, the type of IP interconnection that MetroPCS discusses here has no impact on the Commission's jurisdiction over the underlying traffic, as interconnected voice traffic merely is being exchanged as IP traffic as opposed to TDM. Ultimately, the format in which the traffic is exchanged among interconnected carriers has no impact on what traffic (or on the character of that traffic) is exchanged. Accordingly, no

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¹⁸ Petition at 12.

¹⁹ Petition for Declaratory Ruling that AT&T's Phone-to-Phone IP Telephony Services are Exempt from Access Charges, Order, 19 FCC Rcd 7457 (2004) ("IP-in-the-Middle Order").

²⁰ *IP-in-the-Middle Order* at ¶ 12.

meaningful changes to existing Commission policy or precedent are required, and the Commission can move forward with such a clarification confident in its legal authority to do so.

Further, there can be no doubt that ILECs and other carriers should be obligated to interconnect using IP for CMRS originated voice traffic that is terminated on the PSTN. The Commission, under Section 332, has greater authority with respect to interconnection between CMRS carriers and other telecommunications carriers, and therefore can adopt rules of special concern to CMRS carriers.²¹ Further, the Commission has previously found that CMRS services are common carrier services and telecommunications services subject to Section 251 of the Act.²² Indeed, the definition of CMRS encompasses any "mobile service ... that is provided for profit and makes interconnected service available (A) to the public or (B) to such classes of eligible users as to be effectively available to a substantial portion of the public"²³ In turn "interconnected service" is defined as that service that "is interconnected with the public switched telephone network ..."²⁴ Accordingly, Section 332, does not make a distinction between traffic which is interconnected using TDM or IP – the operative distinction is whether it is interconnected with the PSTN. Since having the traffic exchanged via IP interconnection would not change the character of the traffic (e.g., it is still mobile service and still an "interconnected service") because it would be interconnected with the PSTN, it would remain telecommunications traffic. Therefore, the Commission has the authority to, and should find, that at least with respect to CMRS traffic destined for (or coming from) the PSTN, telecommunications carriers have an obligation to interconnect using IP.

²¹ *Iowa Utils. Bd. v. FCC*, 120 F.3d 753, 800 n.21 (8th Cir. 1997).

²² See Cellco P'ship v. FCC, 2004 LEXIS 1938, *4 - *6 (D.C. Cir. 2004).

²³ Section 332(d)(1).

²⁴ Section 332(d)(2).

IV. THE COMMISSION SHOULD INITIATE AN INQUIRY INTO THE USE OF IP NETWORKS AMONG CARRIERS

As discussed above, the Act obligates carriers to provide interconnection to requesting carriers "at any technically feasible point within the carrier's network." Obviously, this important mandate does not require a carrier "to deploy a new network technology simply to suit an interconnecting carrier," nor does MetroPCS advocate such a draconian result. AT&T seeks to cloud the issue by stating that Section 251(c)(2) "requires access 'only to an incumbent LEC's existing network – not to a yet unbuilt superior one." The Petition seeks no such result, nor would MetroPCS support one. Mandating IP-to-IP interconnection – where technically feasible – in no way would "require ILECs to create new functionalities or capabilities that do not currently exist in their networks, simply to accommodate [a] preference for delivering [] traffic in IP format," as AT&T breathlessly proclaims. Such a requirement overlooks the basic Section 251(c)(2) requirement that the requested interconnection be "technically feasible." AT&T's hyperbole ignores the basic point that if carriers are not able to offer IP-to-IP interconnection because such networks are not yet built, then clearly the Commission cannot force such carriers to receive IP traffic over some hypothetical network.

However, MetroPCS believes that a substantial number of ILECs are using IP in their existing networks to route and deliver traffic internally, at a very minimum. For example, both AT&T and Verizon operate substantial, in some cases near-nationwide, fiber and or high-

²⁵ 47 U.S.C. § 251(c)(2).

²⁶ AT&T Comments at 9.

²⁷ *Id.* (quoting *Iowa Utils. Bd. v. FCC*, 120 F.3d 753, 813 (8th Cir. 1997) (emphasis in original).

²⁸ AT&T Comments at 9.

²⁹ 47 U.S.C. § 251(c)(2).

bandwidth data networks.³⁰ Given that many ILECs are likely already routing their traffic using IP on their own networks, it is highly probable that technically-feasible IP interconnection points are already available for use by other carriers wishing to exchange traffic through IP-to-IP interconnection. Section 251(c)(2)(C) of the Act requires ILECs to provide to requesting carriers interconnection "that is at least equal in quality to that provided by the local exchange carrier to itself or to any subsidiary."³¹ Certainly, therefore, if ILECs are availing themselves of the efficiency and cost advantages of IP routing for their own traffic, requesting carriers must be provided the same benefit.³² Anything less merely preserves the un-level playing field that currently exists between competitive carriers, such as MetroPCS, and large nationwide providers like AT&T and Verizon.

In order to determine whether ILECs are able to provide IP-to-IP interconnection to requesting carriers at points along their networks, the Commission should initiate an inquiry aimed at gathering relevant data regarding ILEC networks. If, as MetroPCS suspects, it turns out that a meaningful number of ILECs are able to provide such interconnection, then those ILECs must provide IP-to-IP interconnection – at a minimum for traffic that originates as circuit-switched traffic – when technically feasible. Absent such a requirement, ILECs may be able to slow the important transition to an all-IP communications network merely to gain a competitive

³⁰ AT&T's U-Verse and Verizon's FiOS are perfect examples of high-speed data networks run by nationwide carriers. Given the fact that the *IP-in-the-Middle Order* resulted from an AT&T Petition for Declaratory Ruling, AT&T clearly has the capability to route voice traffic as IP traffic along its network. Indeed, AT&T's desire to route traffic in over its IP backbone in order to avoid access charges formed the basis of its underlying Petition.

³¹ 47 U.S.C. § 251(c)(2)(C).

³² Further, MetroPCS suspects that AT&T and Verizon are treating this traffic as telecommunications traffic by routing it for delivery via a PSTN and are paying reciprocal compensation for such traffic.

advantage. The Commission must not allow carriers to engage in regulatory game-playing at the expense of network efficiency and reliability. MetroPCS recommends that the Commission initiate such an inquiry as promptly as possible in order to keep pace with the fast-moving technological changes taking place on the nation's communications network.

V. THE COMMISSION NEED NOT (AND SHOULD NOT) REACH THE ISSUE OF WHETHER VOIP IS A TELECOMMUNICATIONS SERVICE IN THE CONTEXT OF THIS PROCEEDING

With respect to the traffic exchanged by MetroPCS, the Commission need not reach the issue of whether VoIP is a telecommunications service or not. As noted above, the Commission already has determined that IP-in-the-middle traffic is not an information service, ³³ and that settled determination is the only one necessary in order to clarify that circuit-switched traffic transported over IP should be interconnected on a IP-to-IP basis where technically feasible.

Moreover, even if the Commission were inclined to tackle the long-pending issue of the proper regulatory classification for VoIP services, such a determination is best reached in the context of a rulemaking proceeding where the industry as a whole participates. Verizon, for example, suggests that action on the VoIP classification issue be taken "in the USF-ICC Transformation Proceeding, where there is already a fully developed record." While MetroPCS does not prefer any particular proceeding to another for resolving this issue, it believes that robust, informed industry participation and a complete record are necessary for the Commission to resolve such an important issue. There are numerous reasons for making such a determination in a separate

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³³ See generally, IP-in-the-Middle Order.

³⁴ Verizon Comments at 12. The Commission also has a long-pending, open proceeding in which it sought comment on the proper regulatory classification of VoIP services. *See IP-Enabled Services*, Notice of Proposed Rulemaking, 19 FCC Rcd 4863 (2004).

³⁵ See, e.g., Petition of U S WEST Communications, Inc. for a Declaratory Ruling Regarding the Provision of National Directory Assistance, Memorandum Opinion and Order, 14 FCC Rcd

proceeding. For example, any determination with respect to whether VoIP is a telecommunications service will require the Commission to address intercarrier compensation, the applicability of access charges to such traffic, and the contributions required in connection with the Universal Service Fund. In addition, such a determination would have an impact on the Commission's authority to set rates and terms and conditions with respect to such services. Further, although VoIP is currently subject to E911, the requirements for telecommunications services are different for VoIP than other telecommunications services. Thus, because of the numerous issues that would have to be examined in the context of classifying VoIP, to do so in the context of an individual Petition for Rulemaking is contrary to the public and participatory nature of the regulatory rulemaking process.

VI. CONCLUSION

As the Commission itself has recognized, the telecommunications landscape is shifting to an all-IP world, and the Commission must be prepared to deal with this sea change. As carriers seek to avail themselves of the cost, efficiency, consumer and public safety benefits of IP-based voice traffic, the Commission must ensure that legacy regulatory classifications do not get in the way of seamlessly interconnected next-generation services. Only by making clear that switched voice traffic, delivered by IP-in-the-middle, should be interconnected on a IP-to-IP basis along its path can the Commission ensure that regulatory obligations will keep pace with market and technological realities. The Commission need not – and should not – address the classification of VoIP services in the context of this Petition. The legal framework, highlighted by the *IP-in-the-Middle Order*, already is in place for the Commission to take this important step.

^{16252 (1999) (}finding that where the Commission lacked "a sufficient record upon which to [make a determination] . . . [such] issues are more appropriately addressed in the context of a rulemaking proceeding.").

Accordingly, MetroPCS respectfully requests that the Commission make clear in the context of any order in this proceeding that ILECs must provide IP-to-IP interconnection for traffic that originates as circuit-switched traffic, when technically feasible.

Respectfully submitted,

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